

CLAIMS

1. An organic EL element comprising:

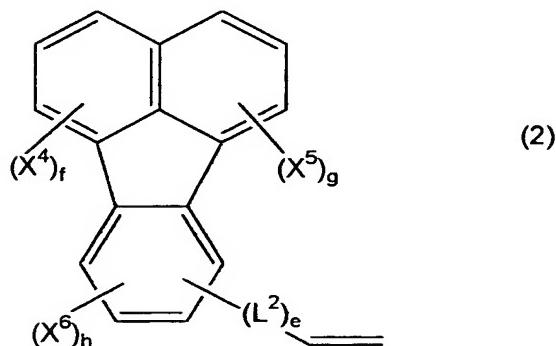
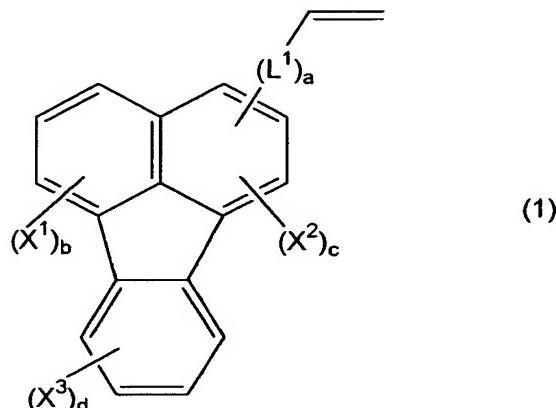
a substrate;

a first electrode layer formed on one side of the substrate;

5 an organic layer formed on the first electrode layer; and

a second electrode layer formed on the organic layer;

the organic layer containing a vinyl polymer obtained by polymerizing a polymerizable monomer containing a compound represented by the following general formula (1) or (2):

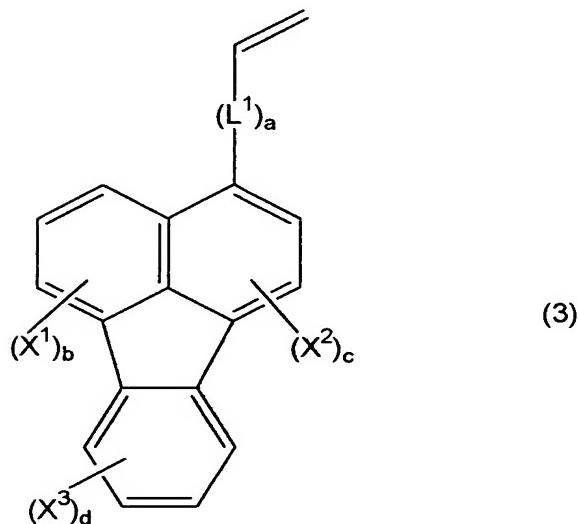


wherein each of L¹ and L² is a bivalent group; X¹, X², X³, X⁴, X⁵, and X⁶ are either the same or different from each other, each referring to alkyl group, alkoxy group, aryl group, aryloxy group, heterocyclic group, amino group, halogen atom, or cyano group; each of a and e is 0

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or 1; each of b, f, g, and h is an integer of 0 to 3; c is an integer of 0 to 2; d is an integer of 0 to 4; and substituents combined to carbon atoms constituting a fluoranthene ring may be combined together so as to form a ring.

5 2. An organic EL element according to claim 1, wherein the vinyl polymer is obtained by polymerizing a polymerizable monomer containing a compound represented by the following general formula (3):



10 wherein L¹ is a bivalent group; X¹, X², and X³ are either the same or different from each other, each referring to alkyl group, alkoxy group, aryl group, aryloxy group, heterocyclic group, amino group, halogen atom, or cyano group; a is 0 or 1; b is an integer of 0 to 3; c is an integer of 0 to 2; d is an integer of 0 to 4; and substituents combined to carbon atoms constituting a fluoranthene ring may be combined together so as to form a ring.

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3. An organic EL element according to claim 1 or 2, wherein the vinyl polymer is obtained by polymerizing a polymerizable

monomer containing at least one of a compound represented by the general formula (1) or (3) where L^1 is a substituted or unsubstituted phenylene group and a is 1, and a compound represented by the general formula (2) where L^2 is a substituted or unsubstituted phenylene group and e is 1.

4. An organic EL element according to any of claims 1 to 3, wherein the vinyl polymer is a copolymer of at least one species of the compound represented by one of the general formulae (1) to (3) and at least one species of vinyl monomer having a structure different from that of the compound.

5. An organic EL element according to any of claims 1 to 4, wherein the organic layer includes a luminescent layer and an electron transport layer formed between a layer in the first or second electrode layer for injecting an electron into the luminescent layer and the luminescent layer, at least one of the luminescent layer and electron transport layer containing the vinyl polymer.

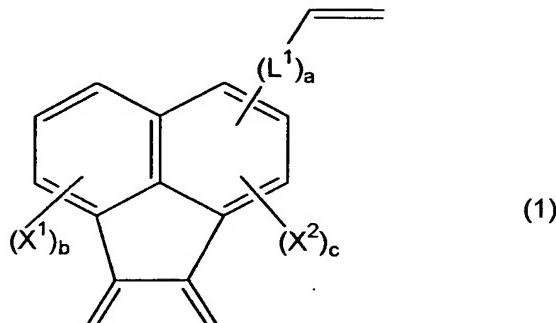
6. An organic EL element according to any of claims 1 to 5, wherein the organic layer further contains a blue-emitting dopant.

7. An organic EL display comprising:

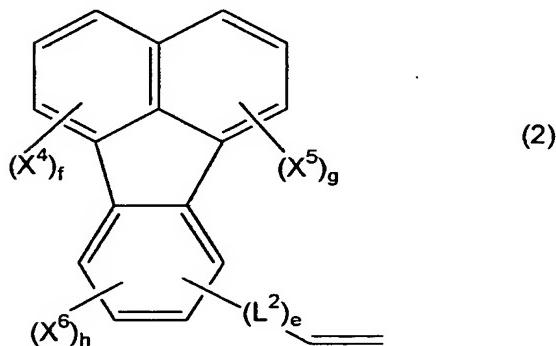
a display part in which a plurality of organic EL elements, each constituted by a substrate, a first electrode layer formed on one side of the substrate, an organic layer formed on the first electrode layer, and a second electrode layer formed on the organic layer, are arranged;

a power supply part, electrically connected to the first and second electrodes, for supplying a voltage or current to the first and second electrodes; and

a switching part for turning on or off the organic EL elements; the organic layer containing a vinyl polymer obtained by polymerizing a polymerizable monomer containing a compound represented by the following general formula (1) or (2):



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wherein each of L¹ and L² is a bivalent group; X¹, X², X³, X⁴, X⁵, and X⁶ are either the same or different from each other, each referring to alkyl group, alkoxy group, aryl group, aryloxy group, heterocyclic group, amino group, halogen atom, or cyano group; each of a and e is 0 or 1; each of b, f, g, and h is an integer of 0 to 3; c is an integer of 0 to 2; d is an integer of 0 to 4; and substituents combined to carbon atoms constituting a fluoranthene ring may be combined together so as to form a ring.